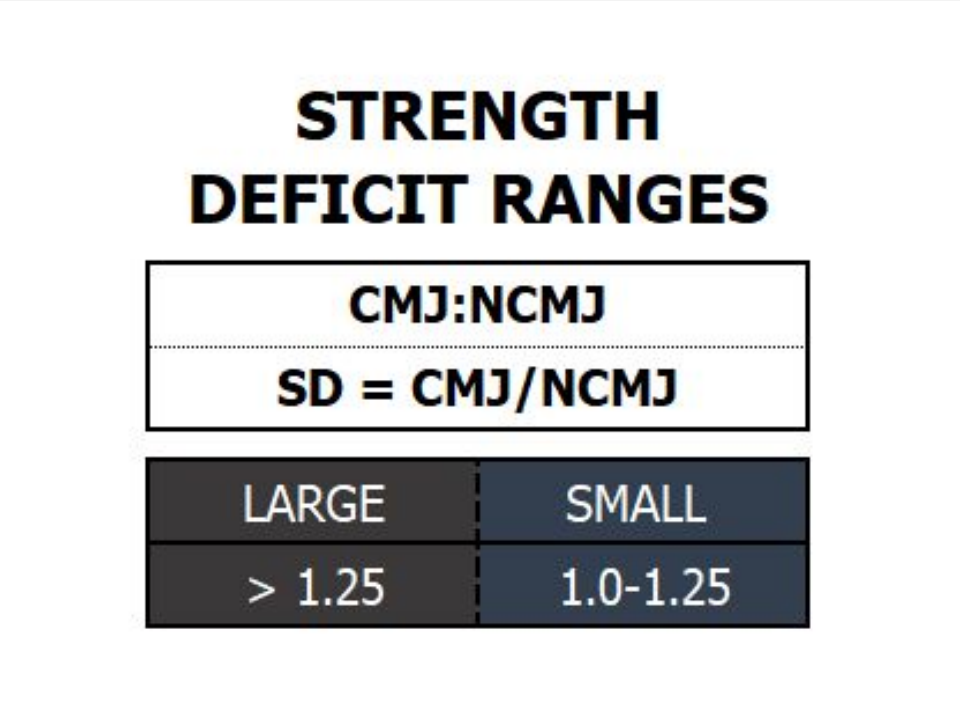
1 Baseline - Determination of Deficit

Determine the Start Point

Start at the End



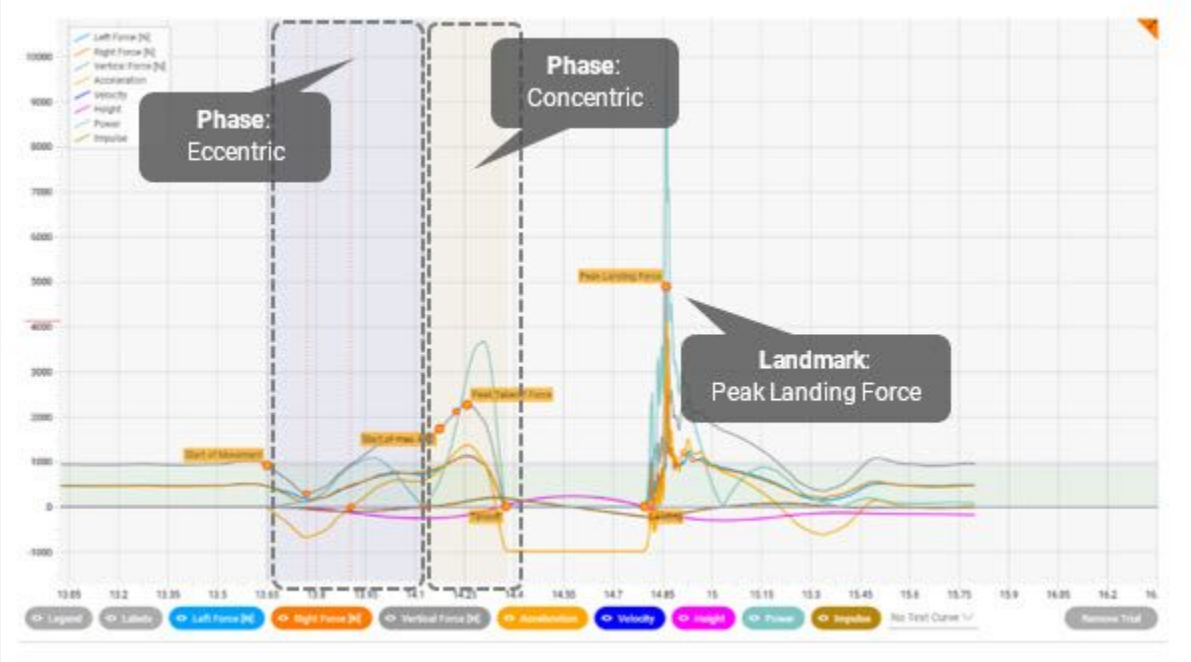
Why CMJ:NCMJ

Standards vs Improvement

JUMP STANDARDS

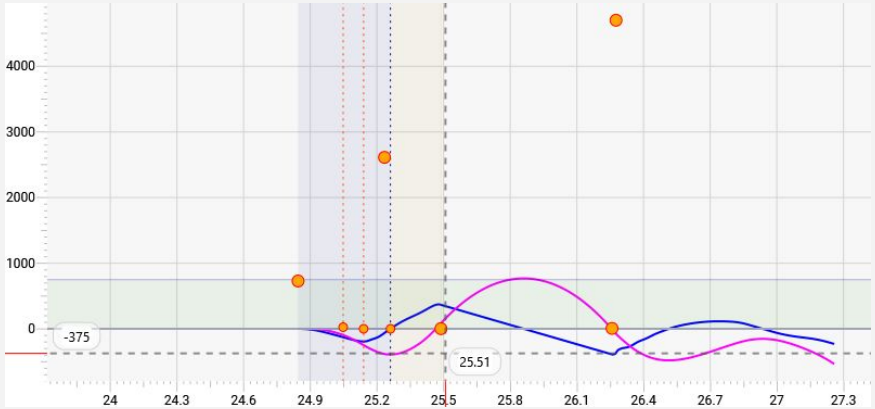
	CMJ	NCMJ
ELITE	> 35″	> 30"
INTERMEDIATE	30"-35"	25" - 30"
LOW	< 25"	< 20"

Breaking Down the Jump (Force Plates)

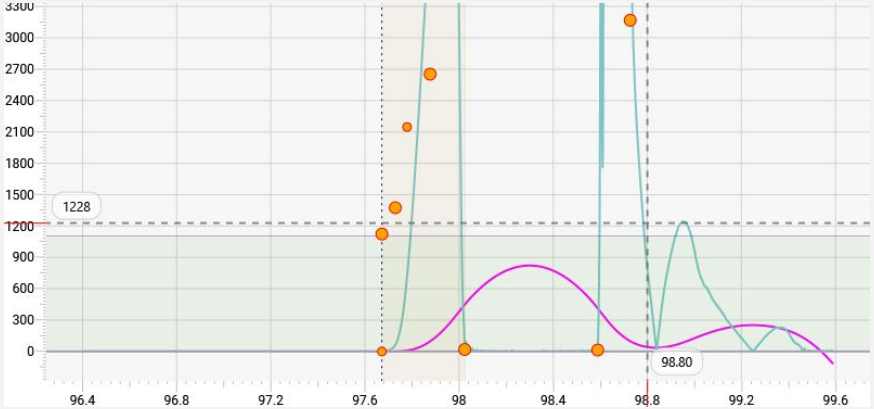


Breaking Down CMJ vs NCMJ

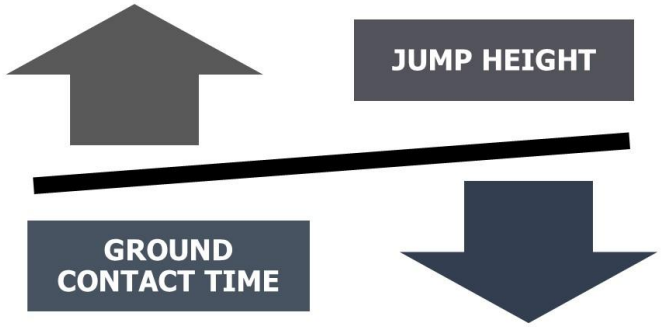
CMJ

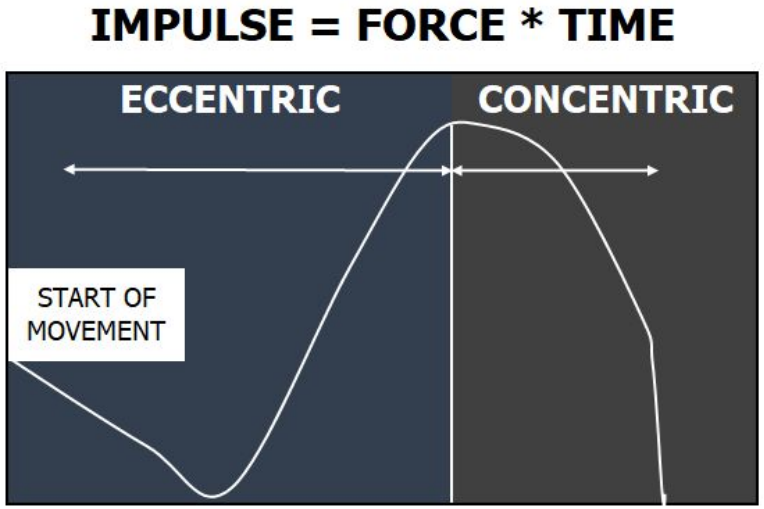


NCMJ

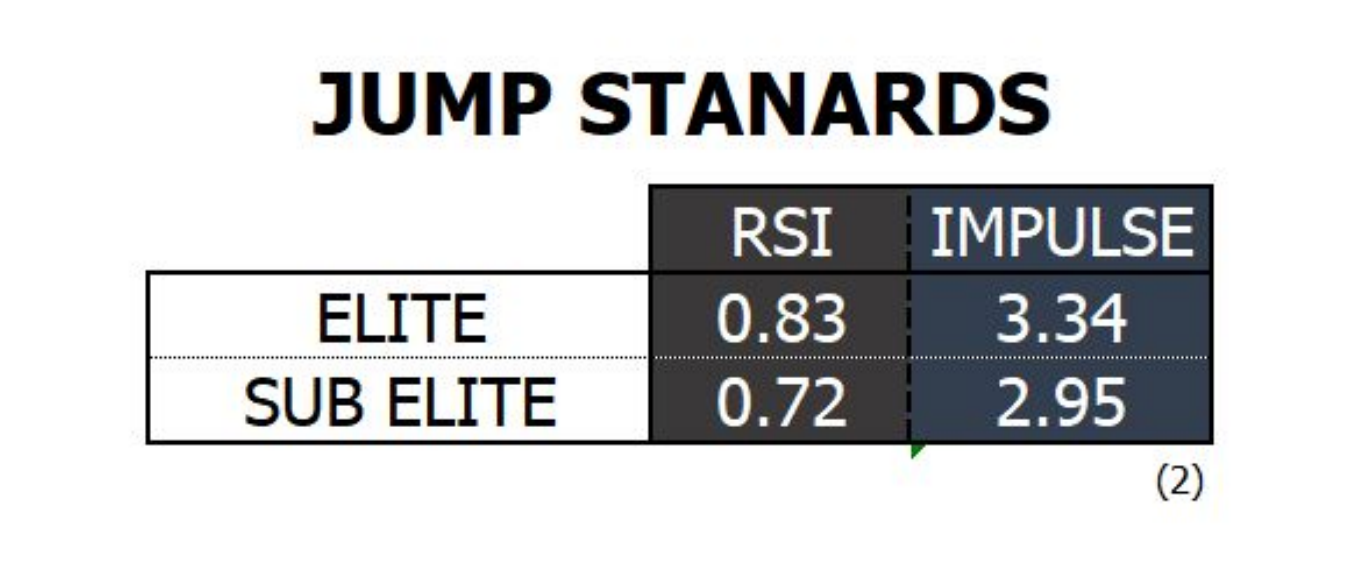


Determining Strength Deficit





Determining Strength Deficit



Determining Characteristics

STRENGTH DEFICIT

	LARGE	SMALL
ORIENTATION	ECCENTRIC	CONCENTRIC
BODY TYPE	NARROW/ECTOMORPH	WIDE/MESOMORPH
TESTING	RSI - SSC	IMPULSE - FORCE
SPRINTING	MAX VELOCITY	ACCELERATION
EXERCISES	YIELDING	OVERCOMING
FIBER TYPE	PARALLEL	PENNATE
MOVEMENT	FLEXION	EXTENSION

Alternative Testing

Jump Matt

CMJ vs NCMJ

CMJ vs 4 Jump

IMTP

RFD/Force

Force Velocity Profiling

CMJ: BW/TB Jump 30% BW/TB Jump 60% BW

Depth Jump

CMJ/DJ 6”/DJ 9”/DJ 12”/DJ 15”

Resources

Kawakami Y, Muraoka T, Ito S, Kanehisa H, Fukunaga T. In vivo muscle fibre behaviour during counter-movement exercise in humans reveals a significant role for tendon elasticity. *J Physiol.* 2002;540(Pt 2):635-646. doi:10.1113/jphysiol.2001.013459

Flanagan EP, Ebben WP, & Jensen RL .(2008) Reliability of the reactive strength index and time to stabilization during depth jumps. Journal of strength and conditioning research, 22(5), 1677–1682. https://doi.org/10.1519/JSC.0b013e318182034b

Schilling, B. K., Falvo, M. J., & Chiu, L. Z. (2008). Force-velocity, impulse-momentum relationships: implications for efficacy of purposefully slow resistance training. Journal of sports science & medicine, 7(2), 299–304.

Stock MS, Luera MJ. Consistency of peak and mean concentric and eccentric force using a novel squat testing device. J Appl Biomech. 2014;30(2):322-325. doi:10.1123/jab.2013-0191

Laffaye G, Wagner P. Eccentric rate of force development determines jumping performance. Comput Methods Biomech Biomed Engin. 2013;16 Suppl 1:82-83. doi:10.1080/10255842.2013.815839

McBride JM, Triplett-McBride T, Davie A, Newton RU. The effect of heavy- vs. light-load jump squats on the development of strength, power, and speed. *J Strength Cond Res.* 2002;16(1):75-82.

Lum, Danny & Chua, Kelvin & Aziz, Abdul Rashid. (2020). Isometric mid-thigh pull force-time characteristics: A good indicator of running performance. Journal of Trainology. 9. 54-59. 10.17338/trainology.9.2_54.

Wang R, Hoffman JR, Tanigawa S, et al. Isometric Mid-Thigh Pull Correlates With Strength, Sprint, and Agility Performance in Collegiate Rugby Union Players. *J Strength Cond Res.* 2016;30(11):3051-3056. doi:10.1519/JSC.0000000000001416

Khamoui AV, Brown LE, Nguyen D, et al. Relationship between force-time and velocity-time characteristics of dynamic and isometric muscle actions. *J Strength Cond Res.* 2011;25(1):198-204. doi:10.1519/JSC.0b013e3181b94a7b